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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DANIELS, MATTHEW J	

ART UNIT	PAPER NUMBER
1732	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/689,357	DEARDURFF, L. ROBERT	
	Examiner	Art Unit	
	Matthew J. Daniels	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Prosecution

1. Prosecution on the merits of this application is reopened on claims 1-10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Rejections set forth previously under this section are withdrawn in view of the new references and in favor of the new rejections below.

Rejections over Bright

3. **Claims 1-3 and 5-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bright (USPN 4622001) in view of Hata (USPN 5411686). **As to Claim 1**, Bright teaches a process for preparing an article which could be used as a blow molding preform (entire document), comprising:

melting polymer in a plasticating extruder, to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (1:55-57);

cooling the polymer melt stream by heat exchange with a liquid heat transfer medium (2:1-15); and

forming the cooled polymer melt into a blow molding preform (2:6, the article of Bright is capable of being used as a blow molding preform).

Bright is silent to (a) flakes of polymer, (b) a screw extruder, and (c) cooling the melt stream to a temperature at least 20 degrees Centigrade below the extruder discharge temperature. However, these aspects would have been prima facie obvious for the following reasons:
(a) Hata teaches flakes (Fig. 16, Item 8), which is a well known method of delivering feedstock
(b) Hata teaches a screw extruder (Fig. 16), which is a well known method of melting and delivering polymer
(c) Bright teaches that the mold (Fig. 1, Item 50), and the nozzle leading to the mold (Fig. 3, Item 92), are each cooled with a heat transfer liquid being maintained at a temperature of less than 10 degrees C (1:63-68). Because the heat transfer liquid is at a temperature significantly lower than the melt, it is the Examiner's position that a temperature drop of at least 20 degrees Centigrade during flow of material *into and through* the cooled mold would have been an implicit aspect of Bright's invention.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Hata into that of Bright because pellets or "flakes" would fit well into the hopper or feedstock inlet, and because Bright clearly suggests plasticating the mixture, which Hata's method would achieve. **As to Claims 2 and 3**, Bright teaches PET (1:55). **As to Claims 5 and 6**, Bright teaches above about 275 degrees C (1:57). **As to Claim 7**, Bright teaches a process for preparing an article which could be used as a blow molding preform (entire document), comprising:

melting polymer comprising polyethylene terephthalate (1:55), in a plasticating extruder to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (1:57-58), the temperature of the polymer melt at the discharge of the extruder being about 275 degrees C (1:57);

cooling the polymer melt stream by heat exchange with a liquid heat transfer medium (1:63-2:15); and

forming the cooled polymer melt into a blow molding preform (2:6, the article is inherently capable of being used as a blow molding preform).

Bright is silent to (a) flakes of polymer, (b) a screw extruder, and (c) cooling the melt stream to a temperature at least 20 degrees Centigrade below the extruder discharge temperature. However, these aspects would have been prima facie obvious for the following reasons:
(a) Hata teaches flakes (Fig. 16, Item 8), which is a well known method of delivering feedstock
(b) Hata teaches a screw extruder (Fig. 16), which is a well known method of melting and delivering polymer
(c) Bright teaches that the mold (Fig. 1, Item 50), and the nozzle leading to the mold (Fig. 3, Item 92), are each cooled with a heat transfer liquid being maintained at a temperature of less than 10 degrees C (1:63-68). Because the heat transfer liquid is at a temperature significantly lower than the melt, it is the Examiner's position that a temperature drop of at least 20 degrees Centigrade during flow of material *into and through* the cooled mold would have been an implicit aspect of Bright's invention.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Hata into that of Bright because pellets or "flakes"

would fit well into the hopper or feedstock inlet, and because Bright clearly suggests plasticating the mixture, which Hata's method would achieve. **As to Claim 8**, Bright teaches PET (1:55). **As to Claims 9**, Bright teaches above about 275 degrees C (1:57), which reads on the claimed temperature range. **As to Claim 10**, Bright teaches a process for preparing an article which could be used as a blow molding preform (entire document), comprising:

melting polymer comprising polyethylene terephthalate (1:55), in a plasticating extruder to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (1:57-58), the temperature of the polymer melt at the discharge of the extruder being about 275 degrees C (1:57);

cooling the polymer melt stream by heat exchange with a liquid heat transfer medium (1:63-2:15); and

forming the cooled polymer melt into a blow molding preform (2:6, the article is inherently capable of being used as a blow molding preform).

Bright is silent to (a) flakes of polymer, (b) a screw extruder, and (c) cooling the melt stream to a temperature at least 20 degrees Centigrade below the extruder discharge temperature. However, these aspects would have been prima facie obvious for the following reasons:
(a) Hata teaches flakes (Fig. 16, Item 8), which is a well known method of delivering feedstock
(b) Hata teaches a screw extruder (Fig. 16), which is a well known method of melting and delivering polymer
(c) Bright teaches that the mold (Fig. 1, Item 50), and the nozzle leading to the mold (Fig. 3, Item 92), are each cooled with a heat transfer liquid being maintained at a temperature of less than 10 degrees C (1:63-68). Because the heat transfer liquid is at a temperature significantly lower than

the melt, it is the Examiner's position that a temperature drop of at least 20 degrees Centigrade during flow of material *into and through* the cooled mold would have been an implicit aspect of Bright's invention.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Hata into that of Bright because pellets or "flakes" would fit well into the hopper or feedstock inlet, and because Bright clearly suggests plasticating the mixture, which Hata's method would achieve.

4. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Bright (USPN 4622001) in view of Hata (USPN 5411686) and further in view of Takahashi (USPN 6320014). Bright and Hata teach the subject matter of Claim 1 above under 35 USC 103(a). **As to Claim 4,** Bright appears to be silent to the claimed particle size. The Examiner asserts that in this case the size of the particle fed into a melt extruder does not materially affect the claimed process, and that any particle size would have been prima facie obvious to the ordinary artisan. However, Takahashi also teaches pellets having an average diameter of 5 mm comprising polyethylene terephthalate (10:10-15). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Takahashi into that of Bright in order to a) provide a dry feed line of material to an injection molding machine or extruder, b) provide pellets that are prevented from scorching, and c) to provide bottles of polyester having excellent properties such as high strength (All are found in Takahashi, 14: 49-62)).

Rejections over Belcher

Rejections set forth above are based on the Examiner's position that the claimed temperature drop is an implicit aspect of the method of Bright. However, if it is ultimately found that the claimed temperature drop cannot be considered to be an implicit aspect of that reference, then the following claim rejections are also believed to render the claimed invention prima facie obvious and are presented additionally in order to expedite prosecution:

5. **Claims 1-3 and 5-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Belcher (USPN 4988279) in view of Schwarzkopf (USPN 4642043). **As to Claim 1**, Belcher teaches a process for preparing a blow molding preform (4:16-27), comprising:

melting polymer flakes (12:20) in a plasticating screw extruder, to prepare a homogeneous stream of hot polymer melt at the discharge of the extruder (2:41 and 4:1-5);

cooling the polymer melt stream at least 20 degrees C (4:7-10); and

forming the cooled polymer melt into a blow molding preform (disclosure in 4:16-23 is interpreted to be a preform).

Belcher is silent to (a) cooling after discharging from the extruder, and (b) cooling with a liquid heat transfer medium. However, these aspects would have been prima facie obvious for the following reasons:

(a) The particular order of cooling and discharging does not distinguish the invention from Belcher, who teaches cooling then simultaneous discharging and forming of the polymer into a tubular preform. The same temperature drop is provided.

(b) Schwarzkopf provides a liquid heat transfer medium for use in "synthetic resin processing machines" (1:17).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schwarzkopf into that of Belcher because doing so would adjust the temperature actively by cooling so as to better maintain the material within the optimal and narrow temperature range (2:11-20). **As to Claims 2 and 3**, Belcher teaches PET (4:1-30). **As to Claims 5 and 6**, Belcher teaches 260-290 C (4:5). **As to Claim 7**, Belcher teaches a process for preparing a blow molding preform (4:16-27), comprising:

melting polymer flakes of PET (12:20) in a plasticating screw extruder, to prepare a homogeneous stream of hot polymer melt at a temperature of 260 C to 290 C (2:41 and 4:1-5);

cooling the polymer melt stream at least 20 degrees C (4:7-10); and

forming the cooled polymer melt into a blow molding preform (disclosure in 4:16-23 is interpreted to be a preform).

Belcher is silent to (a) cooling after discharging from the extruder, and (b) cooling with a liquid heat transfer medium. However, these aspects would have been prima facie obvious for the following reasons:

(a) The particular order of cooling and discharging does not distinguish the invention from Belcher, who teaches cooling then simultaneous discharging and forming of the polymer into a tubular preform. The same temperature drop is provided.

(b) Schwarzkopf provides a liquid heat transfer medium for use in "synthetic resin processing machines" (1:17).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schwarzkopf into that of Belcher because doing so would adjust the temperature actively by cooling so as to better maintain the material within the optimal and narrow temperature range (2:11-20). **As to Claim 8**, Belcher teaches PET (4:1-30). **As to Claims 9**, Belcher teaches 260 to 290 C (4:5). **As to Claim 10**, Belcher teaches a process for preparing a blow molding preform (4:16-27), comprising:

melting polymer flakes of PET (12:20) in a plasticating screw extruder, to prepare a homogeneous stream of hot polymer melt at a temperature of 260 C to 290 C (2:41 and 4:1-5);

cooling the polymer melt stream at least 20 degrees C (4:7-10); and

forming the cooled polymer melt into a blow molding preform (disclosure in 4:16-23 is interpreted to be a preform).

Belcher is silent to (a) cooling after discharging from the extruder, and (b) cooling with a liquid heat transfer medium. However, these aspects would have been prima facie obvious for the following reasons:

(a) The particular order of cooling and discharging does not distinguish the invention from Belcher, who teaches cooling then simultaneous discharging and forming of the polymer into a tubular preform. The same temperature drop is provided.

(b) Schwarzkopf provides a liquid heat transfer medium for use in "synthetic resin processing machines" (1:17).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Schwarzkopf into that of Belcher because doing so

would adjust the temperature actively by cooling so as to better maintain the material within the optimal and narrow temperature range (2:11-20).

6. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Belcher (USPN 4988279) in view of Schwarzkopf (USPN 4642043) and further in view of Takahashi (USPN 6320014). Belcher and Schwarzkopf teach the subject matter of Claim 1 above under 35 USC 103(a). **As to Claim 4**, Belcher appears to be silent to the claimed particle size. The Examiner asserts that in this case the size of the particle fed into a melt extruder does not materially affect the claimed process, and that any particle size would have been prima facie obvious to the ordinary artisan. However, Takahashi also teaches pellets having an average diameter of 5 mm comprising polyethylene terephthalate (10:10-15). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Takahashi into that of Belcher in order to a) provide a dry feed line of material to an injection molding machine or extruder, b) provide pellets that are prevented from scorching, and c) to provide bottles of polyester having excellent properties such as high strength (All are found in Takahashi, 14: 49-62)).

Response to Arguments

7. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 8/16/06

MJD

MARK EASHOO, PH.D
PRIMARY EXAMINER

18/Aug/06